

WHAT IS CLAIMED IS:

1. A polygon mirror rotatable about its axis in a rotating direction for use in an image forming device including a photosensitive body, the polygon mirror comprising:

5 a plurality of reflection surfaces at which a light beam is reflected toward the photosensitive body, each reflection surface including a writing region available for forming an electrostatic latent image on the photosensitive body and a non-writing region unavailable for forming the electrostatic
10 latent image, the writing region being divided into a first reflecting section having a first reflection factor and a second reflecting section having a second reflection factor lower than the first reflection factor.

2. The polygon mirror as claimed in claim 1, wherein a
15 foggy region is generated in each reflection surface as a result of continued operation, and wherein the first reflecting section is encompassed to cover the foggy region.

3. The polygon mirror as claimed in claim 1, wherein the first reflecting section has a first coating layer and a
20 second reflecting section has a second coating layer whose thickness is different from that of the first coating layer.

4. The polygon mirror as claimed in claim 1, wherein the first reflecting section has a first coating layer providing a first refractive index, and a second reflecting section
25 has a second coating layer providing a second refractive index

different from the first refractive index.

5. The polygon mirror as claimed in claim 1, wherein the first reflecting section is positioned upstream of the second reflecting section in the rotating direction.

5 6. The polygon mirror as claimed in claim 5, wherein the first reflecting section has a first coating layer and a second reflecting section has a second coating layer whose thickness is different from that of the first coating layer.

10 7. The polygon mirror as claimed in claim 6, wherein the non-writing region comprises a first non-writing region positioned upstream of the first reflecting section in the rotating direction, and a second non-writing region positioned downstream of the second reflecting section in the rotating direction.

15 8. The polygon mirror as claimed in claim 7, wherein the first non-writing region has a coating layer whose thickness is equal to that of the first coating layer, and the second non-writing region has a coating layer whose thickness is equal to that of the second coating layer.

20 9. The polygon mirror as claimed in claim 5, wherein the first reflecting section has a first coating layer providing a first refractive index, and a second reflecting section has a second coating layer providing a second refractive index different from the first refractive index.

25 10. The polygon mirror as claimed in claim 9, wherein

the non-writing region comprises a first non-writing region positioned upstream of the first reflecting section in the rotating direction, and a second non-writing region positioned downstream of the second reflecting section in the rotating direction.

11. The polygon mirror as claimed in claim 10, wherein the first non-writing region has a coating layer whose refractive index is equal to that of the first coating layer, and the second non-writing region has a coating layer whose refractive index is equal to that of the second coating layer.

12. The polygon mirror as claimed in claim 1, wherein each writing region of each reflection surface provides a tolerable light beam intensity including an upper limit and a lower limit, and

wherein the first reflecting section provides the light beam intensity substantially equal to the upper limit during an initial using period; and

wherein the second reflecting section provides an intermediate light beam intensity between the upper and lower limits during an initial using period.

13. The polygon mirror as claimed in claim 12, wherein the first reflecting section is positioned upstream of the second reflecting section in the rotating direction.

14. The polygon mirror as claimed in claim 13, wherein the first reflecting section has a first coating layer and a

second reflecting section has a second coating layer whose thickness is different from that of the first coating layer.

15. The polygon mirror as claimed in claim 14, wherein the non-writing region comprises a first non-writing region positioned upstream of the first reflecting section in the rotating direction, and a second non-writing region positioned downstream of the second reflecting section in the rotating direction.

16. The polygon mirror as claimed in claim 15, wherein the first non-writing region has a coating layer whose thickness is equal to that of the first coating layer, and the second non-writing region has a coating layer whose thickness is equal to that of the second coating layer.

17. The polygon mirror as claimed in claim 13, wherein the first reflecting section has a first coating layer providing a first refractive index, and a second reflecting section has a second coating layer providing a second refractive index different from the first refractive index.

18. The polygon mirror as claimed in claim 17, wherein the non-writing region comprises a first non-writing region positioned upstream of the first reflecting section in the rotating direction, and a second non-writing region positioned downstream of the second reflecting section in the rotating direction.

19. The polygon mirror as claimed in claim 18, wherein

the first non-writing region has a coating layer whose refractive index is equal to that of the first coating layer, and the second non-writing region has a coating layer whose refractive index is equal to that of the second coating layer.

5 20. The polygon mirror as claimed in claim 1, wherein the light beam provides, on each reflection surface, a beam spot having a first length in a main scanning direction which is equal to a direction of an array of the first reflecting section and the second reflecting section, and a second length
10 in an auxiliary scanning direction perpendicular to the main scanning direction, the first length being greater than the second length.

15 21. An optical scanning device for use in an image forming device including a photosensitive body, the optical scanning unit comprising:

 a light beam emitting unit for emitting a light beam;
 a polygon mirror for reflecting the light beam emitted from the light beam emitting unit; and

20 a driving unit for rotating the polygon mirror about its axis, the polygon mirror including a plurality of reflection surfaces at which the light beam is reflected toward the photosensitive body, each reflection surface including a writing region available for forming an electrostatic latent image on the photosensitive body and a non-writing region
25 unavailable for forming the electrostatic latent image, the writing region being divided into a first reflecting section

being divided into a first reflecting section having a first reflection factor and a second reflecting section having a second reflection factor lower than the first reflection factor.

22. An image forming device for forming an image on an image recording medium comprising:

an image forming unit comprising a photosensitive body on which an electrostatic latent image is formed; and

an optical scanning device comprising:

a light beam emitting unit for emitting a light beam;

a polygon mirror for reflecting the light beam emitted from the light beam emitting unit; and

a driving unit for rotating the polygon mirror about its axis, the polygon mirror including a plurality of reflection surfaces at which the light beam is reflected toward the photosensitive body, each reflection surface including a writing region available for forming the electrostatic latent image on the photosensitive body and a non-writing region unavailable for forming the electrostatic latent image, the writing region being divided into a first reflecting section having a first reflection factor and a second reflecting section having a second reflection factor lower than the first reflection factor.